IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A gap-soliton structure comprising:

a cladding structure having alternating layers of different index values; and

a core region that is interposed between said alternating layers of index values and comprises a modified core portion in which propagation of certain frequencies is not allowed and includes one or more non-linear materials, wherein said core or said cladding structure ~~includes one or more nonlinear materials~~are arranged so as to achieve gap-soliton bistability.

2. (Original) The gap-soliton structure of claim 1, wherein said cladding structure and core region form a photonic crystal fiber.

3. (Original) The gap-soliton structure of claim 2, wherein said photonic crystal fiber comprises a Holey fiber.

4. (Original) The gap-soliton structure of claim 2, wherein said photonic crystal fiber comprises an omniguide fiber.

5. (Canceled)

6. (Canceled)

7. (Currently Amended) A method of forming a gap-soliton structure comprising:

forming a cladding structure having alternating layers of different index values;

forming a core region that is interposed between said alternating layers of index values and comprises a modified core portion in which propagation of certain frequencies is not allowed and includes one or more non-linear materials; and

~~providing in~~arranging said core [[or]]and said cladding structure ~~one or more nonlinear materials~~ so as to achieve gap-soliton bistability.

8. (Original) The method of claim 7, wherein said cladding structure and core region form a photonic crystal fiber.

9. (Original) The method of claim 8, wherein said photonic crystal fiber comprises a Holey fiber.

10. (Original) The method of claim 8, wherein said photonic crystal fiber comprises an Omniguide fiber.

11. (Cancelled)

12. (Cancelled)

13. (Currently Amended) A gap-soliton structure comprising:

a cladding structure having alternating layers of different index values; and

a core region that is interposed between said alternating layers of index values and comprises a modified core portion in which propagation of certain frequencies is not allowed and includes one or more non-linear materials, wherein either said core or said cladding structure is indicative to enhancing said gap-soliton bistability of said structure.

14. (Currently Amended) The gap-soliton structure of claim 13, wherein said cladding structure and core region form a photonic crystal fiber.

15. (Original) The gap-soliton structure of claim 14, wherein said photonic crystal fiber comprises a Holey fiber.

16. (Original) The gap-soliton structure of claim 14, wherein said photonic crystal fiber comprises an Omniguide fiber.

17. (Cancelled)

18. (Cancelled)

19. (Currently Amended) A method of forming a gap-soliton structure comprising:

forming a cladding structure having alternating layers of different index values; and

forming a core region that is interposed between said alternating layers of index values and comprises a modified core portion in which propagation of certain frequencies is not allowed and includes one or more non-linear materials so that either said core or said cladding structure is indicative to enhancing said gap-soliton bistability of said structure.

20. (Currently Amended) The method of claim 19, wherein said cladding structure and core region form a photonic crystal fiber.

21. (Original) The method of claim 20, wherein said photonic crystal fiber comprises a Holey fiber.

22. (Original) The method of claim 20, wherein said photonic crystal fiber comprises an Omniguide fiber.

23. (Original) The method of claim 19, wherein said core comprises said one or more nonlinear materials in a defined region.

24. (Original) The method of claim 19, wherein said cladding structure comprises said one or more materials.

25. (Original) The gap-soliton structure of claim 1, wherein said core performs single mode guiding of light.

26. (Cancelled)

27. (Original) The gap-soliton structure of claim 1, wherein said cladding structure comprises a modified cladding portion in which propagation is not allowed.

28. (Cancelled)

29. (Original) The gap-soliton structure of claim 27, wherein said modified cladding portion comprises said one or more nonlinear materials.

30. (Original) The method of claim 7, wherein said core performs single mode guiding of light.

31. (Cancelled)

32. (Original) The method of claim 7, wherein said cladding structure comprises a modified cladding portion in which propagation is not allowed.

33. (Cancelled)

34. (Original) The method of claim 32, wherein said modified cladding portion comprises said one or more nonlinear materials.

35. (Original) The gap-soliton structure of claim 13, wherein said core performs single mode guiding of light.

36. (Cancelled)

37. (Original) The gap-soliton structure of claim 13, wherein said cladding structure comprises a modified cladding portion in which propagation is not allowed.

38. (Cancelled)

39. (Original) The gap-soliton structure of claim 37, wherein said modified cladding portion comprises said one or more nonlinear materials.

40. (Original) The method of claim 19, wherein said core performs single mode guiding of light.

41. (Cancelled)

42. (Original) The method of claim 19, wherein said cladding structure comprises a modified cladding portion in which propagation is not allowed.

43. (Cancelled)

44. (Original) The method of claim 42, wherein said modified cladding portion comprises said one or more nonlinear materials.